

THE DISCOVERY OF TORRES STRAIT

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The whole area of Torres Strait is part of the continental shelf which joins Australia and New Guinea over hundreds of miles. The shelf rises to a shallower bank of nine fathoms and less, extending north from Cape York Peninsula, where it is about 60 miles wide, to a long stretch of the New Guinea coastline. This bank is no doubt mainly of coral, but the larger islands on it are of rock, indicating a solid foundation. Owing to the large area of the Strait, only the regular shipping tracks are well charted, leaving large areas blank except for warnings of unknown shoals and reefs. The tidal streams in the passages are very strong, reaching speeds up to eight knots in some places. Navigation in the Strait is therefore hazardous, requiring the use of pilots for all except local vessels. The pilots, all experienced Master Mariners, also take ships through the Great Barrier Reef, and form an elite corps named the Queensland Coast and Torres Strait Pilot Service.

The first Europeans to sight any part of the Strait were the Dutch, under Willem Janszoon in the small vessel *Dyfken*, some time in the months of March and April 1606. They made a very fine chart of the western side of the Strait and its islands, but they regarded the area as a bight of shallow water in the coastline of New Guinea, and therefore thought that Cape York Peninsula was an extension of the New Guinea coastline. After vague reports of Torres' voyage reached Holland in 1622, later Dutch expeditions were ordered to look for the Strait, but they were rebuffed by the reefs and by the prevailing trade wind.

Only six months after the *Dyfken* had passed by, the Strait was penetrated and traversed by Captain Luis Baez de Torres, with two vessels of the three which had been the squadron

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of Quiros. These had set forth from Peru in December 1605 to seek the Great South Land, or *Terra Australis Incognita*. Having discovered Espiritu Santo Island in the New Hebrides, Quiros deserted his consorts and sailed back to America, announcing that he had discovered part of the mythical continent. Torres was left with two vessels, his own *San Pedro* of about 80 tons, and a smaller launch named *Los Tres Reyes*.

CLOSE TO AUSTRALIA

After making certain that Espiritu Santo was only an island, Torres proceeded to carry out the Royal Orders by sailing West-South-West into the Coral Sea to a position in Latitude 21° South, and about 154° East Longitude. Here he would have been only 60 miles from the Great Barrier Reef, and about 140 miles from the Australian mainland. He then abandoned his search for the continent, and steered North to pass around the eastern end of New Guinea en route for Manila. He failed to clear the Louisiades by a few miles, and found it impossible to beat into the trade wind, so was forced to follow the southern edge of the reefs and islands by sailing West with the wind. As a result, he discovered the unknown southern coastline of New Guinea, and passed with difficulty through Torres Strait in the months of September and October, 1606.

Although we have no log-book, chart or journal from Torres, we have a few documents which give some details of his passage through the Strait. Unfortunately these documents have caused a lot of confusion by their omissions, apparent contradictions, and obvious errors. Apart from Torres' letter to the King of Spain from Manila, and a report by Quiros on a letter he had received from Torres, most of the information has come from a "spare-captain" who travelled with Torres; this was the noble Don Diego de Prado y Tovar, a military engineer by profession. Not only did Prado write a narrative of the voyage, but he also drew seven or eight charts, of which only four are known to exist to-day. The four we have are plans of ports and anchorages, while the missing ones include two track charts, and one of the coastline of New Guinea, which Prado called Magna Margarita after the Queen of Spain who died in 1611.

ON NEW GUINEA COAST

Torres' landfall at the Louisiades was Tagula Island, where he sighted the reefs across his bow at first light on 14 July 1606. The pilots made the latitude $11\frac{1}{2}^{\circ}$ South. From here they followed the reefs and coastline for 630 miles on an

average course of West-by-North which took seven weeks. About half this time was spent at anchor, gathering water, wood and fresh food, as they had nothing to eat but ship's biscuits. On nights not spent in port they steered seawards for safety, and this added to the distance actually sailed, which Torres estimated as 300 leagues, or 900 miles, and this included crossing the Gulf of Papua.

To quote Torres' own words, with my comments in brackets: "Having gone along 300 leagues of coast, and diminished two and a half degrees (of latitude, from the original $11\frac{1}{2}$) we came to a stop in nine (degrees of latitude); from here begins a Placel (shallow bank) of three fathoms to nine, which runs along the coast one hundred and eighty and some leagues." The word "Placel" which Torres used exclusively to refer to the shallow waters of Torres Strait, requires some explanation. Prado used the spelling "Pracel," and this is to be seen on many charts of those days to indicate shallow areas, which were shown as an area of dots, with crosses to indicate dangerous rocks. The plural form of the word can still be seen to-day in the Paracel Islands near Indo-China. Prado actually defines the word in the margin of his narrative: "Pracel is a clear sandy ground without rocks". The expression "Placer mining" refers to mineral mining by dredging river beds or sandy shallows.

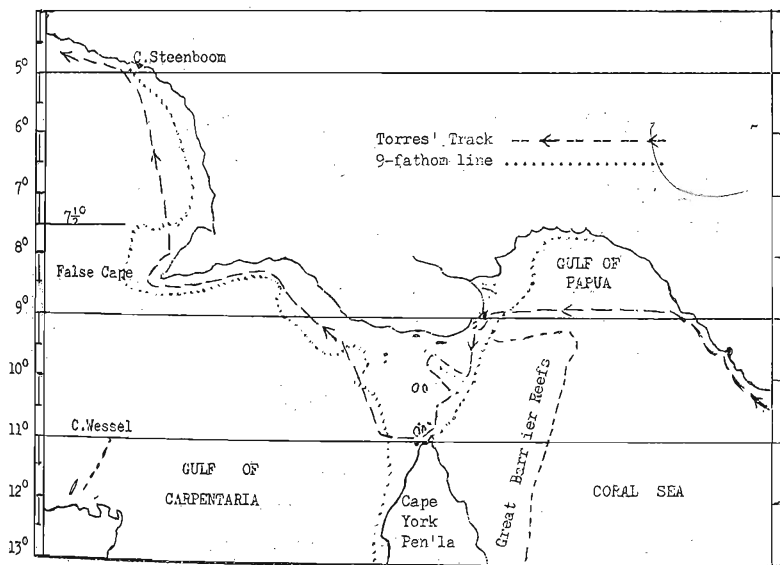


Diagram showing the shallow bank or Placel of Torres between Australia and New Guinea as defined by the 9-fathom line, and Torres' track over it from the Gulf of Papua to Cape Steenboom.

After mentioning the start of the Placel, its depths and extent, Torres then mentions where it ends: "We went over it to seven and a half degrees, and the end of it is in five." On the chart illustrated, the Placel's seaward edge is defined as the nine-fathom contour, a dotted line. It will be seen that after meeting the Placel in 9° South, and passing through Torres Strait, the most likely place for Torres to leave the Placel is about 50 miles north of False Cape, in about $7\frac{1}{2}^{\circ}$ South, when he was steering about Nor-Nor-West. Here the Placel can be seen to contract eastwards to the coast, which it follows until it merges with the coastline near Cape Steenboom, in 5° South. From where he left the Placel in $7\frac{1}{2}^{\circ}$ Torres was in deeper water, up to 26 fathoms, en route to Cape Steenboom. Thus the meaning of Torres' words becomes quite clear from the chart. In past years a lot of confusion has arisen by readers thinking that the $7\frac{1}{2}$ referred to a position in the Gulf of Papua, and that the word "five", not being able to be latitude in the Gulf, must have been fathoms.

Some of the confusion was caused by the fact that Torres, after describing the extent of the Placel, then reverts back to his navigation after first meeting the Placel. Prado tells us that after meeting the Placel they sighted land and found an anchorage under a cape and a point of land, which formed an inlet. This was Bampton Point, on Parama Island, in 9° South, near the delta of the Fly River. They next worked their way through the reefs to Bristowe Island (Bobo Island), but could get no further along the coast.

TOWARDS ENDEAVOUR STRAIT

Torres' next words are: "We could not go forward owing to the many shoals and great currents which are throughout it (the Placel); so we had to go out turning south-west in the said depth (three to nine fathoms) to eleven degrees." This average course was to take them eventually to Endeavour Strait, over a trying period of nearly a month. After leaving Bristowe Island, which Prado named "Malandanca" because of the bad navigation nearby, their course took them down the Great North East Channel and through Basilisk Passage to Dungeness Island. Prado called this the Island of Dogs, giving its latitude as 10° South.

Their next stop was at Turtle-Backed Island, seven miles to the West, where the launch was attacked by two war-canoes. They therefore named it "Isla de Caribes, (Cannibals). From the summit, which is 270 feet high, Prado claimed to have counted 40 other islands, which is an exaggeration. In a village

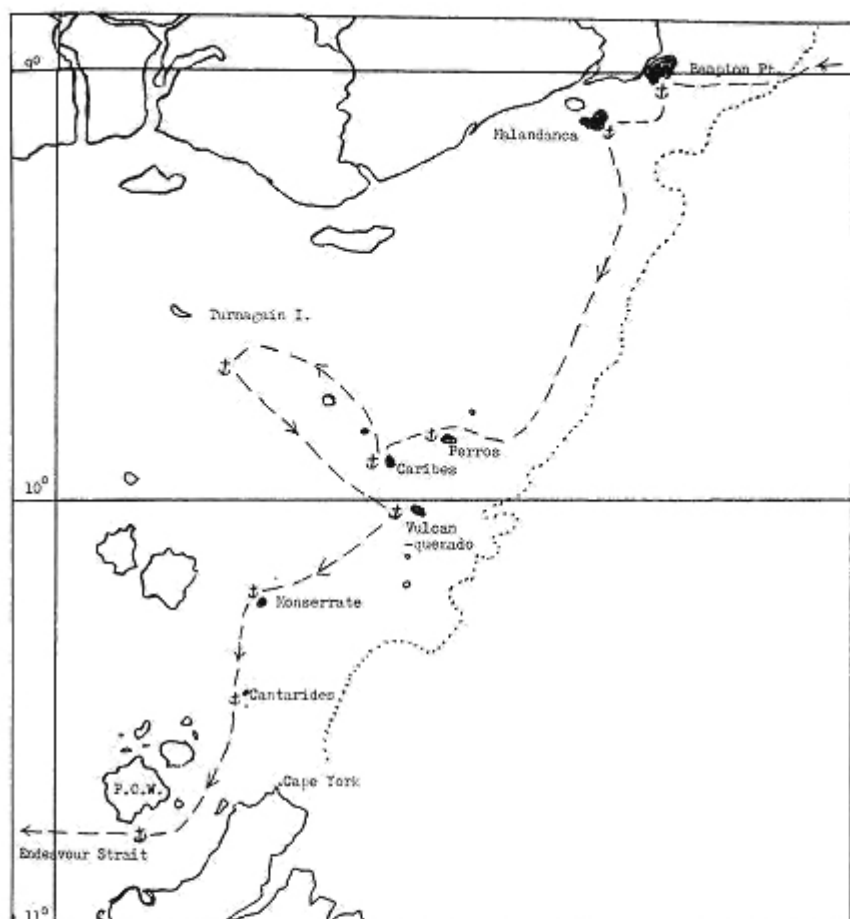


Diagram showing Torres' track over the Placel from 9° South to 10°48' (Endeavour Strait) and the islands off which he anchored. The 9-fathom contour is shown as a dotted line.

there they found masks made of turtle-shell, and some large figures of the same material, similar to some in the Queensland Museum.

From this island they made an attempt to regain the coast of New Guinea by steering North West for 30 miles or more, until they were blocked by extensive reefs towards Turnagain Island. Two later navigators were to be baulked in the same position, Captain Bligh in 1792, and Captain Bampton in 1793. A council was held by Torres, and from it was evolved the idea of working the tides to beat their way back against the constant South-East wind. As the ebb tide ran in that direction, they remained at anchor until high tide, then ran with the ebb until low water, when they anchored again. After three days they

got back to their old track, anchoring off Long Island, 10 miles south of the Island of Dogs. Here they found a lot of pumice stone over the sandy island, which gave the idea that it had once been a volcano, despite it being a low flat coral island. They named it "Vulcan-Quemado", or extinct-volcano. They also saw a number of large white birds, the Torres Strait pigeons, and some wild plums, like those of Nicaragua. These are the small yellow plums growing around the beaches on a lot of the islands, carrying the botanical name of *Ximinea americana*, and not the better known red plum called Wangai which also grows in Torres Strait, but not in Nicaragua or Central America. The plums were described by Prado as having a large stone and little flesh, which is correct, and they have a very astringent taste.

From Long Island the ships resumed the course of South-West for 25 miles, which took them to an anchorage beside the sharply peaked island of Mount Ernest. As this reminded them of Mount Monserrate near Barcelona, where there is an ancient monastery, and a shrine to Our Lady, the island was given this name. From here they sailed southwards, making use of the tides, and anchored between two small islands. These were Twin Island and East Strait Island, at the eastern end of Prince of Wales Channel, where the tides are very strong. The crews of the ships were assailed by swarms of flies or beetles which they said were Cantharides, the Blistering-Beetle or Spanish Fly, which gave the name Cantarides to the island. After a delay due to the fierceness of the tides, their course was resumed towards the groups of islands to the South and South-West.

From this position they would have seen islands extending nearly all around the horizon. Torres apparently chose to continue his South-West course, which took him between Cape York Peninsula and the Prince of Wales Islands, and therefore through Endeavour Strait. Passing along this Strait, which is nine miles wide, the mainland of Australia and its off-lying islands would not have appeared as impressive as the Prince of Wales group, which contains hills twice the height. There was nothing to suggest to Torres that the shoreline on his port side was the missing continent for which he had searched in vain in the South Pacific and the Coral Sea.

On Tuesday afternoon the 3 October, the two vessels anchored for the night about two miles south of Cape Cornwall, the southern extremity of Prince of Wales Island. Here the depth had shoaled from seven fathoms to five, but they did not realise that this little five-fathom bank had two shallower patches on it of only 16 feet of water. Prado tells us that the

San Pedro began bumping on the bottom in the middle of the night, and that this was remedied by paying out more cable and "lightening the deck", which probably meant hoisting their heavy boat over the side into the water. The launch escaped danger, though she was anchored closer to the shore. This detail from Prado enables us to plot the very spot where Torres anchored, as the five-fathom bank with two nigger-heads is shown on the large-scale chart of Endeavour Strait. The position is in Latitude $10^{\circ} 48'$ South, close enough to the 11 degrees quoted from Torres previously.

As there was an eclipse of the moon on 16 September, which was mentioned by Prado, I have worked out the tides for the 3 and 4 October 1606, and this suggests that low tide was at 1.30 a.m. on the 4th, when the tidal stream would have changed from east-going to west-going. By waiting for the following low water, about 2 p.m. on the 4th, Torres had the chance to get a good observation for latitude from the sun at noon. About 2 p.m., when the stream set West again, the ships got under weigh and went with the tide and the wind, steering due West until they left all the land behind them. Quoting again from Torres: "and for all of it (the placel) there was an archipelago of islands without number, which we passed by, and at the end of the eleven degrees the placel goes shallower". This refers to the track of the ships westward from their anchorage, as the depths are mostly six and seven fathoms until about 18 miles from the anchorage, where there is a shallower bank or bar with only 22 feet of water at low tide. Thereafter the water deepens slowly to 10 and 15 fathoms, with no land in sight, and here Torres set course to the North.

USE OF THE ASTROLABE

It is important to fix Torres' latitude for Endeavour Strait, as many previous writers have denied that he reached so far South. In those days the altitude of the sun at noon was taken by the astrolabe, a heavy brass disc with a sighting bar pivoted at the centre, which enabled the shadow from the sun to be lined up against the graduated limb of the disc. The astrolabe is held by a ring which allows it to hang freely in the field of gravity, so that the altitude of the sun is measured against the pull of gravity. Unfortunately the instrument is also free to move freely with the rolling of the ship, making an observation rather a hit or miss affair. A good navigator could not expect an average error of less than 15 miles, in reasonable conditions. When used ashore the astrolabe could give better results, an average of about 10 miles, a lot of this being due to the tables of the sun's declination, the inexactness of the graduations,

We also have support from Prado, who wrote: "We were among these reefs and shoals for 34 days: They run out in the sea, as far as we could judge, about 50 leagues (150 miles) in a southerly direction." A quick check of the distance from Bampton Point to their anchorage in Endeavour Strait comes to 150 miles, with a similar distance from there to where they met the coast south of False Cape.

Although Prado's charts showing Torres Strait are missing, they were presumably lent to cartographers between 1608 and 1615 to help them draw their charts of the world, and some copies of copies of these have been identified in recent years as showing the work of Prado and the discoveries of Torres. The earliest of these manuscript charts, dated 1613 is by Eredia, who produced some detailed charts of New Guinea between that date and his death in 1623. Other charts and globes from 1623 onwards agree with Eredia's work in showing an area of "Pracel" extending from the coast of New Guinea down to about 12° South, dotted with rocks and islands down to 11° South. Unfortunately the details vary in other respects, such as the number and position of the islands, and the shapes of the headlands. We can only suppose that the southernmost islands represent Cape York Peninsula, and therefore the continent of Australia, while the area of "Placel" is certainly Torres Strait.

DEPARTURE FROM STRAIT

After mentioning the shallower bar of Endeavour Strait, Torres continues: "There were very large islands and they seemed larger on the southern side". So Torres concluded his very brief description of Torres Strait, though he was not yet clear of his Placel. Four days after leaving the Strait the two vessels were rounding the shallows of False Cape, where they anchored on the northern side, and saw the coastline running towards the North-East. They did not follow it, but set course again for Manila, about Nor-Nor-West. This soon took them out of sight of the low coastline, and into deeper water at last. Another four days brought them once more to the coastline near Cape Steenboom, where the latitude was 5°, and where the Placel was seen to finally end. This agrees with Torres' first statement about the Placel, "and the end of it is in Five". From this position Torres wrote: "Finally we went running to the West-Nor-West along the coast". They made a fairly pleasant cruise along the coast, anchoring in four ports in about 4° and then working their way to the western extremity of New Guinea in 1½° South and thence to the Equator. From there they made their way

to the Spice Islands and reached Manila on the 22 May 1607, after a voyage of 17 months from Peru. One of the best features of the long voyage was that they only lost one man from an arrow wound, and none from illness. Their freedom from scurvy was probably due to their lack of provisions, which forced them to seek fresh food ashore from native gardens and shellfish from the beaches, as well as fishing from the ships while at anchor.

Torres' Letter to the King, for long the only document available on the voyage, still rests in the Archivo-General at Simancas in Spain, and photostat copies are available at the main libraries in Australia. Supplementing this basic record we now have the narrative of Prado in the Mitchell Library, Sydney, and a printed copy of the Quiros Memorial which contains his abstract of Torres' letter to him. Many additional documents have been found and published in the works of the Rev. Father Celsus Kelly, O.F.M., who has spent a lifetime of research into Spanish voyages in the South Pacific and whose friendship and help has been invaluable to me. I should like to commend to the reader the paper by Dr. J. E. O'Hagan entitled ";; eto insahrdul etaoín etaonshrdlucmfwyp chhhhrds entitled *The Use of Torres' Charts by 17th Century Cartographers*, read to a meeting of this Society on 26 February 1959, which deals with the Van Langren Globe of c. 1625.*

In addition to the references generally available, I have obtained xerox copies of the four surviving Prado charts from the Archivo-General, and more recently, photographs of the Chinese Globe of 1623 made by two Jesuit priests at Peking for the Emperor, and now in the British Museum.

In conclusion I wish to express my admiration firstly to Torres as a fine commander in all respects, and secondly to his unpaid and unofficial cartographer, Prado, who has given us so much lively detail in his narrative, in addition to the only charts from this great, but long neglected, voyage of discovery in 1606.

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